

1 **Listing of Claims:**

2 1—22. (Cancel)

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4 23. (Currently Amended) A method for printing, comprising:

5 obtaining color space requirements of a document to be printed, wherein  
6 the requirements define a boundary of a color space associated with the document;

7 obtaining a rendering intent from an author;

8 selecting a printer from among a plurality of printers based on a best fit as  
9 determined by the color space requirements of the document, the rendering intent  
10 of the author and gamuts of each of the plurality of printers, wherein each gamut  
11 defines a boundary of a device colors space indicating colors printable by the  
12 printer; and

13 determining if color mapping is needed, and if so selecting a color map  
14 from a selection comprising:

15 a first color map ~~configured to map colors, located between the~~  
16 ~~boundary of the device colors space and the boundary of the input color space, to~~  
17 ~~the boundary of the device colors space, and to not map colors within the device~~  
18 ~~colors space to preserve their accuracy based on an absolute colorimetric rendering~~  
19 intent; and

20 a second color map ~~configured to map colors, located between the~~  
21 ~~boundary of the device colors space and the boundary of the input color space,~~  
22 ~~past the boundary of the device colors space and into the device colors space, and~~  
23 ~~to map colors within the device colors space to preserve color separation between~~

1 ~~them and the colors mapped into the device colors space based on perceptual~~  
2 rendering intent;

3 wherein selecting based on the best-fit comprises:

4 comparing the color space requirements of the document with a  
5 device colors space of each of two or more printers; and

6 comparing how well each printer would respond to an author's  
7 indicated preference for absolute colorimetric rendering intent or perceptual  
8 rendering intent.

9  
10 24. (Previously Presented) The method of Claim 23, wherein selecting  
11 the color map additionally comprises:

12 giving an author an opportunity to select a color map that balances  
13 preservation of color accuracy against color separation; and  
14 using the selected color map in printer selection.

15  
16 25. (Previously Presented) The method of Claim 23, wherein the  
17 selection of color maps additionally comprises:

18 a third color map, which balances not mapping device colors to preserve  
19 their accuracy against mapping device colors to preserve color separation between  
20 device colors and colors mapped into the device colors space, wherein the  
21 balancing comprises mapping device colors by less distance within the device  
22 colors space than they are mapped by the second mapping.

1           26. (Previously Presented) The method of claim 23, additionally  
2 comprising:

3           mapping colors within the document according to the selected color map;  
4 and  
5           printing the document.

6  
7           27. (Previously Presented) The method of Claim 23, wherein  
8 determining if color mapping is needed is based on the color space requirements  
9 of the document, the rendering intent of the author and the device colors space of  
10 the selected printer.

11  
12           28. (Currently Amended) The method of claim 23, wherein selecting the  
13 printer based on best-fit-analysis, comprises:

14           comparing volumes of the color space requirement of the document to the  
15 gamuts of each of the plurality of printers;

16           comparing a percentage of colors within the document included in each of  
17 the gamuts of each of the plurality of printers; or

18           comparing area within the document associated with colors in each of the  
19 gamuts of each of the plurality of printers.

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21           29. (Currently Amended) The method of claim 23, wherein gamuts of  
22 each of the plurality of printers are obtained ~~from~~ from a library of printer gamut  
23 information.  
24  
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1           30. (Previously Presented) The method of claim 23, wherein gamuts of  
2 each of the plurality of printers are obtained directly from the printers themselves.

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4           31. (Currently Amended) A print system, comprising:  
5 a documents requirement module configured to obtain a color space  
6 requirements of a document to be printed, wherein the requirements define a  
7 boundary of a color space associated with the document;

8 a preferences interface configured to obtain a rendering intent from an  
9 author; and

10 an evaluation module configured for selecting a printer from among a  
11 plurality of printers based on a best fit as determined by the color space  
12 requirements of the document, the rendering intent of the author and gamuts of  
13 each of the plurality of printers, wherein each gamut defines a boundary of a  
14 device colors space indicating colors printable by the printer;

15 wherein the evaluation module determines if color mapping is needed, and  
16 if so uses a color map from a selection comprising:

17 a first color map based on absolute colorimetric rendering intent,  
18 ~~wherein colors between the boundary of the device colors space and the boundary~~  
19 ~~of the input color space are mapped to the boundary of the device colors space,~~  
20 ~~and colors within the device colors space are not mapped to preserve their~~  
21 ~~accuracy; and~~

22 a second color map based on perceptual rendering intent, ~~wherein~~  
23 ~~colors between the boundary of the device colors space and the boundary of the~~  
24 ~~input color space are mapped past the boundary of the device colors space and into~~  
25

1 ~~the device colors space, and colors within the device colors space are mapped to~~  
2 ~~preserve color separation between them and the colors mapped into the device~~  
3 ~~colors space;~~

4 wherein the evaluation module determines the best fit by a method  
5 comprising:

6 comparing the color space requirements of the document with a  
7 device colors space of each of two or more printers; and

8 comparing how well each printer would respond to an author's  
9 indicated preference for absolute colorimetric rendering intent or perceptual  
10 rendering intent.

11  
12 32. (Previously Presented) The print system of Claim 31, wherein the  
13 selection additionally comprises:

14 a third color map, configured combine characteristics of the first and  
15 second color maps.

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17 33. (Previously Presented) The print system of Claim 31, wherein the  
18 print system is configured to allow selection between the color maps, and the  
19 selection comprises:

20 selecting the color map based on absolute colorimetric rendering intent  
21 when user input indicates a preference to preserve color accuracy within the  
22 device colors space; and  
23  
24  
25

1 selecting a color map based on perceptual rendering intent when user input  
2 indicates a preference to preserve color separation between colors within the  
3 device colors space and colors outside the device colors space.

4  
5 34. (Previously Presented) The print system of Claim 31, wherein the  
6 evaluation module obtains the gamuts of each of the plurality of printers from:  
7 a library of printer gamut information; or  
8 directly from the plurality of printers.

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12 36. (Previously Presented) The printer system of claim 31, wherein the  
13 printer system is configured to allow selection between the first and second color  
14 map based on an author's indicated preference for absolute colorimetric rendering  
15 intent or perceptual rendering intent.

16  
17 37. (Previously Presented) The printer system of claim 31, additionally  
18 comprising:

19 a sensor array configured to evaluate printed documents and update the  
20 boundary defining the device colors space of each printer.

21  
22 38. (Currently Amended) A print system configured to select a printer to  
23 print a document, comprising:  
24  
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1 a plurality of printers, wherein a gamut of each printer is defined by a  
2 boundary indicating a device colors space comprising colors printable by the  
3 printer;

4 a sensor array configured to evaluate printed documents and update the  
5 boundary defining the device colors space for each printer;

6 a print server configured to select a printer from among the plurality of  
7 printers, wherein the selecting is based on a best fit analysis as determined by  
8 color space requirements of the document, a rendering intent of an author and  
9 gamuts of each of the plurality of printers; and

10 a custom gamut mapping module, comprising:

11 a first color map based on absolute colorimetric rendering intent,  
12 wherein colors outside the boundary of a device colors space are mapped to  
13 the boundary of the device colors space, and colors within the device colors  
14 space are not mapped to preserve their accuracy; and

15 a second color map based on perceptual rendering intent, wherein  
16 colors outside the boundary of the input color space are mapped into the  
17 device colors space, and colors within the device colors space are mapped  
18 to preserve color separation between the them and the colors mapped into  
19 the device colors ~~space-space~~;

20 wherein the print system is configured to allow selection between the color  
21 maps, and the selection comprises:

22 selecting the color map based on absolute colorimetric rendering  
23 intent when user input indicates preference to preserve color accuracy  
24 within the device colors space; and  
25

1           selecting a color map based on perceptual rendering intent when user  
2           input indicates preference to preserve color separation between colors  
3           within the device colors space and colors outside the device colors space.  
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5           39. (Previously Presented) The print system of Claim 38, wherein the  
6           custom gamut mapping module additionally comprises:

7                 a third color map configured to map device colors by less distance in the  
8           device colors space than the colors are mapped by the second mapping.  
9

10           40. (Previously Presented) The print system of Claim 38, wherein the  
11           print system is configured to allow selection between the color maps, and the  
12           selection comprises:

13                 selecting the color map based on absolute colorimetric rendering intent  
14           when user input indicates preference to preserve color accuracy within the device  
15           colors space; and

16                 selecting a color map based on perceptual rendering intent when user input  
17           indicates preference to preserve color separation between colors within the device  
18           colors space and colors outside the device colors space.  
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20           41. (Previously Presented) The print system of Claim 38, wherein the  
21           print system is configured to allow selection between the color maps, and the  
22           selection additionally comprises:

23                 selecting a color map that balances preservation of color accuracy and color  
24           separation when indicated by user input.  
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2 42. (Cancel)  
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4 43. (Previously Presented) The print system of claim 38, wherein  
5 determining if color mapping is needed is based on the color space requirements  
6 of the document, the rendering intent of the author and the device colors space of  
7 the selected printer.  
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9 44. (Previously Presented) The print system of claim 38, wherein the  
10 best-fit analysis, comprises:

11 using an algorithm to determine best fit, wherein the algorithm is selected  
12 in response to input from the author.  
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